

212/536

Remarks

Claims 1-27 remain pending in the application. Claim 28 and 29 have been added.

Claim Objections

Claim 14 has been amended to address the informality of omitting "upper" before the term "inwardly" to agree with the rest of the dependent claims.

Claim Rejections — 35 U.S.C. § 102 (McCombs, et al.)

The Office Action rejects claims 1-10, 13-24, and 27 under 35 U.S.C. § 102(e) as being anticipated by McCombs, et al., Gas By-Pass Valve, U.S. Patent 6,186,477 (Feb. 13, 2001). The Examiner states McCombs discloses a valve having a valve body of non-conformable material having a bore extending therethrough, the bore extends in the directions from the inlet port to the outlet port. The Examiner further states there is an upper inwardly extending flange (unnumbered but near reference numeral 24) whose bottom serves as a valve seat, a plunger extends through the bore and has an upper small diameter segment, a lower large diameter segment and a disk. The portion is of smaller diameter than the disk and a biasing spring surrounds it. The upper portion has an annular groove of smaller diameter than the rest of the upper portion and holds a sealing ring. The valve is covered by a resilient housing.

The assertion that McCombs discloses a plunger with an upper segment extending through the bore, with the upper segment having a smaller diameter than the lower segment of the plunger is incorrect. McCombs' plunger 50 (McCombs calls it a stem) actually has a lower segment 54 of smaller diameter than the upper segment, and it can easily pass through the bore of the guide cylinder 20. What the Examiner identifies as the lower segment of the plunger

212/536

is actually a separate cylinder (McCombs calls it a plunger) depicted in McCombs' Figure 6. The plunger in McComb has an upper segment which cannot pass through the bore of the guide cylinder, as made clear in McCombs' Figures 1a, 1b and 1c. Thus, the assertion that McCombs discloses a plunger with an upper segment extending through the bore, with the upper segment having a smaller diameter than the lower segment of the plunger is incorrect. Since McCombs fails to disclose at least one limitation recited in the Applicant's invention, Claims 1-10, 13-24, and 27 are not anticipated by McCombs.

The assertion that McCombs discloses a flange is also incorrect. The O-ring shown in McCombs seats against the shoulder of the guide cylinder 28, which is not a flange. The term flange is well understood to be distinct from a barrel or cylinder, and the Examiner does not indicate confusion as to the meaning of the terms. Flanges are well known structures in many arts, and it is not likely that a flange and a cylinder will be confused. Examples of flanges, should there be any question as to the structure of a flange, are numerous. See, for example, Suzumura, et al., Process Of Forming Annular Member From Cylindrical Member Having Radial Flange At One End, U.S. Patent 6,339,948 (Jan. 22, 2002) or Mochizuki, Grommet Having A Resilient Flange, U.S. Patent 6,240,597 (Jun. 5, 2001) which clearly illustrate flange structures. Moreover, McCombs' lengthy guide cylinder would create an undesirable protrusion in the context of use with a boot worn for skiing or snowboarding, where the boots are subject to impact during use. Thus, there is a certain disincentive to adopt the guide cylinder structure shown in McCombs. The provision of a flange at the top of the valve body minimizes the profile of the valve and makes it more suitable for use in the skiing or snowboarding environment. (It may be appreciated that McCombs' two part plunger and stem necessitate the long guide cylinder, and that a flange could not retain the stem without further modification.) Therefore, since McCombs fails to disclose at

212/536

least one limitation recited in the Applicant's invention, namely the inwardly extending flange, Claims 1-10, 13-24, and 27 are not anticipated by McCombs.

The Examiner is also incorrect in the assertion the upper portion has an annular groove of smaller diameter than the rest of the upper portion and holds a sealing ring is disclosed in McCombs. In view of the McCombs' construction, it should be clear that the groove shown in McCombs is not disposed on the upper portion, but is instead disposed on a separate cylinder which, if it has any analogy to the claimed device, would be the lower segment (because it cannot pass the valve seat). Since McCombs fails to disclose at least one limitation recited in the Applicant's invention, namely the upper portion having an annular groove of smaller diameter than the rest of the upper portion and holding a sealing ring, Claims 1-10, 13, 14, 16-24, and 27 are not anticipated by McCombs.

Since McCombs fails to disclose at least one limitation recited in the Applicant's invention: the plunger with an upper segment extending through the bore with the upper segment having a smaller diameter than the lower segment of the plunger; the inwardly extending flange; and the upper portion having an annular groove of smaller diameter than the rest of the upper portion and holding a sealing ring; the Applicant's invention is not anticipated by McCombs. Therefore, withdrawal of this rejection is respectfully requested.

Claim Rejections — 35 U.S.C. § 102 (Crow)

The Office Action rejects claims 1, 2, 5, 7, 11, 14, 16, 19, 21 and 25 under 35 U.S.C. § 102(e) as being anticipated by Crow, High pressure micro valve, U.S. Patent 5,364,070 (Nov. 15, 1994). The Examiner states Crow discloses a valve having a valve body of non-conformable material having a bore extending therethrough, the bore extends in the direction of the inlet port and the outlet

212/536

port. There is an inwardly extending flange whose bottom serves as a valve seat, a plunger extends through the bore and has an upper small diameter segment, a lower large diameter segment and a disk. The upper portion has an annular groove of smaller diameter than the rest of the upper portion and holds a sealing ring. The lower segment has a frustoconical surface which corresponds to the valve seat. The Applicant respectfully traverses this rejection.

The Examiner is incorrect in his assertion that Crow discloses a plunger extending through the bore, said plunger having an upper segment of small diameter making it capable of moving through the bore of the upper inwardly extending flange, said plunger having a lower segment of larger diameter such that said lower segment cannot pass through the bore of the upper inwardly extending flange, **said lower segment of the plunger having an upper surface positioned in apposition to the bottom surface of the upper inwardly extending flange** and a lower surface. As clearly illustrated in Figure 2 of Crow, the guide taper 100 of the plunger assembly 70 is not positioned to be in opposition of the radial flange assembly 85. The guide taper's diameter 100, is slightly less than second bore section 50. (see also Crow, Column 3, lines 19-22). The smaller diameter of the guide taper makes it impossible for the taper to oppose the radial flange assembly 85. This is very different from the Applicant's invention. In Crow, the radial flange assembly is opposed solely by the flange O-ring 105 as shown in Figure 2 and Figure 3. As stated in column 3, lines 28-32, when urged against the first construction 55, the flange O-ring 105, acts to seal the junction between the radial flange assemble 85 and the first construction 55 preventing flow between the first bore section 45 and the second bore section 50. In Crow, there is no upper surface in the lower segment positioned in opposition to the bottom surface of the upward extending flange.

212/536

Since Crow fails to disclose at least one limitation recited in the Applicant's invention, the lower segment of the plunger having a upper surface positioned in apposition to the bottom surface of the upper inwardly extending flange, the Applicant's claimed invention is not anticipated. Therefore, withdrawal of this rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 102 (Jeory)

The Office Action rejects claims 1 and 5-12 under 35 U.S.C. § 102(e) as being anticipated by Jeory, Connectors and Valves, U.S. Patent 6,234,450 (May 22, 2001). Jeory is not enabled. Therefore, Jeory cannot be used as a prior art reference for rejection.

In determining that quantum of prior art disclosure which is necessary to declare an applicant's invention 'not novel' or 'anticipated' within section 102, the stated test is whether a reference contains an 'enabling disclosure'... ." In re Hoeksema, 399 F.2d 269, 158 USPQ 596 (CCPA 1968). The disclosure in an assertedly anticipating reference must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation. *Elan Pharm., Inc. v. Mayo Foundation for Medical and Education Research*, 346 F.3d 1051, 1054, 68 USPQ2d 1373, 1376 (Fed. Cir. 2003). See also MPEP §2121.01.

In Jeory, the specification and Figure 1 disclose the O-ring seal (30) located at the base of the shoulder (26) of the valve member (24) and contacts the bore (20a). The position of the O-ring seal (30) at the shoulder of the valve member occludes the flow of fluid between the upper bore (20b) and the lower bore (20a) as it is in contact. Simply put, it is not possible for air to flow through this valve as disclosed. Even if the valve member in Jeory is depressed, the O-ring still remains in contact with

212/536

the the bore (20a) occluding airflow. Since Jeory is non-functioning as a valve it is not enabled. In further differentiation, it should also be noted the lower segment of the plunger in the Applicant's claimed invention in unoccluded. Jeory does not teach a plunger having a lower segment which is unoccluded.

Since Jeory lacks enablement and cannot be used as a reference under 35 U.S.C. §102, withdrawal of this rejection is respectfully requested.

Claim Rejections – 35 U.S.C. § 103(a)

The Office Action rejects claims 11, 12, 25, and 26 35 U.S.C. § 103(a) as being unpatentable over McCombs in view of Jeory. Jeory is not enabled and fails to teach the Applicant's claimed invention. Accordingly, it cannot be used as a reference with McCombs. Since Claims 11 and 12 depend from claim 1 and claim 25 depends from claim 14 while claim 26 depends from claim 25.

The Office Action does not state a motivation to combine the references. The Office Action states that it would have been obvious to combine the references in order to achieve a certain result, but does not identify a motivation to make the suggested combination. The Office Action identifies, at the time of the invention, it would have been obvious to one of ordinary skill in the art to make the lower portion of McCombs have a frustoconical shape in order to have an efficient sealing surface that wears correctly and maintains seal over time. There is no indication that this motivation is extant in the art and there is no motivation in either reference to combine them. The applicant requests that the claims be examined under the standards of Graham v. John Deere. That is, if a motivation can be identified in the art, it should be expressed to the Applicant so that the Applicant can address it.

212/536

Further, the combination of McCombs and Jeory fails to disclose the Applicant's claimed invention. A ring comprising a conformable material disposed between the plunger lower segment and the upper inwardly extending flange is not shown in either reference. The "plunger" in McCombs is a **two-part "plunger"**. The "plunger" in McCombs comprises a plunger and a stem as shown in Figure 1a of the reference while the Applicant's plunger is not a two-part. McCombs does not disclose an upper inwardly extending flange. McCombs also fails to disclose a plunger having a lower segment of the plunger having an upper surface positioned in apposition to the bottom surface of the upper inwardly extending flange. The O-ring shown in McCombs seats against the shoulder of the guide cylinder, which is not a flange. The term flange is well understood to be distinct. As admitted by the Examiner on page 4 of the Office Action, McCombs also fails to disclose a lower portion of having a frustoconical shape. The Examiner states Jeory discloses a valve with a lower segment having a frustoconical, but as discussed *supra*, Jeory fails to teach an **unoccluded lower segment**. Neither McCombs nor Jeory singularly or in combination disclose the Applicant's invention.

To bring additional understanding to the distinction between the Applicant's invention and a combination of Jeory and McCombs, it is important to note the O-ring in McCombs is disposed between an extending ring and a microduct. The Examiner is incorrect in his assertion that combining the references discloses the Applicant's invention. The placement of the O-ring in McCombs is contrary to the overarching understanding in the art that valve seats should not be made of conformable materials (as indicated by common teachings to avoid over-torquing valves to avoid deforming the valve seats). McCombs' reason for supplying an O-ring, in an unusual application as part of the valve seat, is so that it gets squashed broadly enough to form a flat annular surface to cover the microduct (item 24, also referred to as the valve seat). Applicant's valve does not have a microduct, so the purpose of

212/536

providing an O-ring in McCombs' valve is lost in Applicant's valve. Thus, the Examiner's assertion Jeory and McCombs can be combined to disclose the applicant's invention is incorrect.

Since Jeory cannot be used as a reference and since there is no motivation to combine McCombs and Jeory, withdrawal of this rejection is respectfully requested.

Double Patenting

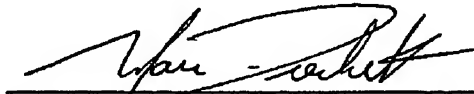
Claims 1, 2, and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. patent 6,409,486. A terminal disclaimer in compliance with 37 CFR 1.321(c) has been filed with this response to overcome this rejection. Therefore, withdrawal of this rejection is respectfully requested.

Conclusion

This response has addressed all of the Examiner's grounds for rejection. The rejections based on prior art have been traversed. Reconsideration of the rejections and allowance of the claims is requested.

Date: December 17, 2004

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